BOULETIN Volume 32 - Number 36 / September 29, 1978 BROOKHAVEN NATIONAL LABORATORY

New Isotopes Produced at MEIN

Scientists in BNL's Nuclear Chemistry Program have used secondary neutrons from the 200 MeV proton Linac – plus some fast footwork and fast chemical separations – to produce uranium-242 and neptunium-242, the highest mass isotopes of those elements ever to be identified. They are the latest in a series of new isotopes made during the last four years at the Chemistry Department's Medium Energy Intense Neutron facility (MEIN).

MEIN is located next to the Linac and is one of several facilities which use excess protons from the Linac for various types of irradiations. The Linac, which serves as an injector for the AGS, can produce five pulses of protons every second, but the AGS normally requires only one pulse every two seconds. The excess protons are diverted into a spur tunnel, where many of them are used by the Brookhaven Linac Isotope Producer to make large quantities of radionuclides for use in nuclear medicine.

Within the same spur tunnel, the protons can be diverted to the Chemistry Linac Irradiation Facility (CLIF), where they have been used to produce neutron-rich nuclei. In these irradiations, an incoming proton from the Linac dislodges some of the protons already in the target nucleus, leaving a nucleus which has extra neutrons compared to the original. These neutron-rich products can be chemically separated from the target material and their decay properties can be studied by gamma-ray and beta-ray spectroscopy.

But it is difficult to study the neutronrich isotopes which are produced in this way, because the incoming protons also cause quite different reactions, dislodging both protons and neutrons from the target material and leaving behind nuclei which are neutron-deficient instead of neutronrich. The neutron-deficient isotopes, usually present in large amounts, emit radiation which interferes with the spectroscopy, making it very hard to obtain clear data on the behavior of the neutron-rich nuclei. The interference problem can be minimized, however, if the targets are irradiated with neutrons rather than protons, since neutron-induced reactions will produce relatively more neutron-rich nuclei than in the proton irradiations.

Copper Beam Stop

With this end in mind, a water-cooled copper beam stop was installed at the end of the CLIF beam tunnel. When protons hit this copper beam stop, they cause spallation reactions which result in the liberation of neutrons. The protons stay within the beam stop, and a Medium Energy Intense Neutron (or MEIN) beam comes out. These secondary neutrons can then be used to irradiate targets and produce the desired neutron-rich isotopes.

The targets are enclosed in small capsules called "rabbits" which are placed behind the beam stop, and later retrieved, by means of a pneumatic transfer line. Irradiation time ranges from a couple of minutes to a couple of hours, depending on the half-life of the isotope being produced.

New Isotopes Produced

MEIN was completed in early 1975, and by that summer, a new isotope of iron (iron-62) had already been produced by irradiating an isotopically enriched nickel-64 foil. By April 1976, the MEIN project staff was ready to announce the identification of three more new isotopes: tungsten-190, osmium-196 and radium-230. All were the heaviest isotopes of their elements ever to be produced and characterized.

The most recent additions to the new isotope lineup – uranium-242 and neptunium-242 – were first seen in February 1977, and the MEIN group (which currently includes chemists Seymour Katcoff, Peter Haustein, Eena-Mai Franz and Dick Hseuh) reported on the isotope pair at the April meeting of the American Physical

Society and at the Miami Beach meeting of the American Chemical Society, held two weeks ago.

The uranium/neptunium pair is produced by irradiating a target consisting of a small amount of plutonium-244 placed on a special ion exchange resin, for about half an hour. After irradiation, the target is taken to the Chemistry Building where a series of complex radiochemical separations is performed to isolate the uranium-242 from the plutonium and its fission products. The isolated uranium-242 is then taken to a germanium detector to measure the energy and intensity of the gamma rays given off as it decays, and the results go into a computer-based analyzer which puts the data on magnetic tape to be fed into BNL's large computers for analysis. Based on the computer output, scientists can infer the isotope's decay scheme, which identifies the excited levels of the nucleus and the transitions that occur between them.

The neptunium-242 is a decay product of the uranium-242 and provides the MEIN group with a second new isotope to study, "almost," says Peter Haustein, "like getting the neptunium for free." Although the neptunium-242 is also produced in the irradiation, it decays rapidly (its half-life is only two minutes) and can only be studied as the daughter product from its uranium-242 parent.

Production Difficulties

Production and separation of the uranium/neptunium pair is particularly difficult, notes Haustein, because irradiation of the plutonium target produces large amounts of fission products (over 40 elements, in fact) which must be separated from the uranium before study of the pair can begin. Uranium-242's half-life is only 17 minutes and the chemical separations take close to 45 minutes. By the time they are completed, about 75 percent of the uranium has already disappeared.

Some fast footwork is required to ensure that enough uranium-242 will remain in the sample for analysis, so the MEIN team has perfected a routine for cutting down on lost time. When the target is pulled from the MEIN beam, a car is already waiting outside, with its motor running and the door open. The target is pulled out, placed in a lead-shielded "pig," and rushed to the second floor of the Chemistry Building for processing and analysis.

(The first new isotope produced at MEIN - iron-62 - has a half-life of only 68 seconds, so short that it was impossible to transfer to the Chemistry Building for processing. Separations and identification of this isotope were done immediately in a lab located at the CLIF-MEIN facility).

In the future, the group plans to look for neptunium-243 and uranium-241, two Continued on Page 3



10:00 A.M.: The "rabbit" containing the irradiated target is removed from the pneumatic transfer line by Peter Haustein.

9-1278-78



10:04 A.M.: Haustein and Dick Hseuh rush the target into the Chemistry Building for processing.



Morton S. Roberts will become Director of the National Radio Astronomy Observatory, Brookhaven's sister laboratory, on October 1. He will succeed David S. Heeschen who has served in this position since 1962

Dr. Roberts' long association with the NRAO began in 1959 when he was a visiting observer. He joined the staff in 1964 and now holds the rank of Senior Scientist. Although primarily concerned with research, he has made many contributions to the operations of the Observatory, including serving as Assistant Director for Green Bank Operations during 1969-70.

Roberts To Head NRAO

His research interests have encompassed both optical and radio astronomy. Most recently, his work has been concerned with the study of neutral hydrogen in galaxies, a field in which he is the recognized authority. Other highlights of his research include the first measurement of extragalactic HI absorption in radio galaxies and the first high-redshift hydrogen detections, with a resultant determination of the remarkable constancy of several fundamental constants of physics over a look-back time of one-third the age of the Universe. He also made the first clear enunciation that many, if not most galaxies have flat rotation curves -- a fundamental datum describing the mass distribution in the outer regions of such systems.

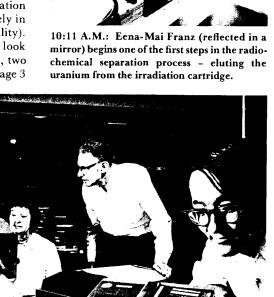
Roberts received his master's degree from the California Institute of Technology in 1950 and his doctorate from the University of California at Berkeley in 1958. He is a member of the American Association for the Advancement of Science, the American Astronomical Society and the International Astronomical Union.

APS Retains Exemption

The Internal Revenue Service, in a recently issued report, affirms that the American Physical Society (APS) is a scientific and educational organization and therefore tax-exempt. The report by the North Atlantic Regional Office of the IRS reverses the position of the Manhattan District Office which held that the Society should be treated as a business league and taxed accordingly.

The report by the Regional Office takes into account the Society's Protest and conferences. It concludes, "the exemption granted the American Physical Society under Section (c) (3) of the Code should not be disturbed."

In response, Norman F. Ramsey, President of APS, said, "the entire physics community will be pleased that the Internal Revenue Service has recognized the scientific and educational character of The American Physical Society and its role in the science of our nation."



10:45 A.M.: The separation and analysis nears completion with neptunium-milking chemistry and gamma ray counting, using a computer-based analyzer. Pictured from left to right are Franz, Doris Franck, Seymour Katcoff, and Hseuh.

—photos by Humphrey

Weekend Tour Last of Season

Environmental issues are a major public concern. In this, the last public tour of the season, the Safety and Environmental Protection Division will focus on its environmental activities. Does Brookhaven have an effect on our local ecosystem? What is being done in the Marshall Islands program? Weekend visitors will be able to discuss these questions with the environmental monitoring group as they tour the Division's main offices and laboratories.

EXHIBIT CENTER

Apply Now

The Office of Scientific Personnel has annouced that application forms and schedules of critical dates for the 1979 AUI Trustee Scholarships are available. The application deadline is November 10, 1978.

Each scholarship will be in the amount of \$1250 per year and is renewable for up to four consecutive years. Children of Lab employees who began full time employment no later than January 1, 1978 are eligible, as are children of retired employees or of employees who died when in regular service at the Laboratory. Applicants must be secondary school seniors who will be graduated during the current academic year and who will enter college in the fall of 1979.

Up to ten scholarships are awarded on a competitive basis and are granted independent of financial need or other forms of student aid. Winners are selected by an independent committee appointed by College Scholarship Service/Sponsored Scholarship Programs (CSS/SSP). The secondary school academic record, school recommendation, scores of the Scholastic Aptitude Test and three Achievement Tests are among the factors considered by the committee in addition to the applicant's school and community activities, and evidence of leadership and creativity.

Up to three additional scholarships may be awarded to minority group children; one is available to a qualified student of a BNL employee and one to a qualified student of a National Radio Astronomy Observatory employee. The third scholarship may be awarded to a student of either laboratory, on a competitive basis. Pertinent federal criteria will determine the eligibility of applicants for these scholarships.

Applications and further details are available from the Office of Scientific Personnel, 40 Brookhaven Avenue.

The Cohn Scholars

All five children of Dr. Stanton Cohn of the Medical Department have been AUI scholarship winners. Here is a note on their progress:

Avra, who won the award in 1970, is completing her doctorate in Computer Science this year at the University of Edinburgh. Haldan, winner in 1971, is completing his Ph.D. in Astrophysics at Princeton and will return to his undergraduate school, Harvard, as a postdoctoral fellow. Holly, winner of the award in 1973, completed her undergraduate work in three years, and is in her second year of work at law school at the University of Southern California. Cara, 1974 winner, graduated with a degree in mathematics from Stanford in June. Evan, the 1978 winner, entered Harvard this month.

Dr. Cohn adds that "the parents are about ready to graduate to the poor house."

9-699-78 Retiring on September 298-1299-78



Charles Pukit, a Staff Shop Technician in the Accelerator Dept., who has been with BNL since September 1950, retires today to enjoy an extended vacation to the Florida Keys and Gulf Coast, and to Mexico. Pukit, who has made his home on Long Island for 23 years, hopes to relocate to a warmer climate – perhaps to Mexico.



Paul J. Melvin, a Lab employee since April 1961, retires this month to his home in Florida. Melvin, a Dietary Services Assistant in the Medical Dept., has lived all his life in the Northeast but prefers golfing and swimming in Florida's North Riviera Beach to the cold on Long Island.

-photos by Rosen

Famous Trio Opens Concert Season

Standing room only is expected for the performance of the Beaux Arts Trio in Berkner Hall on Thursday, October 12. This world famous ensemble will open the 1978-79 BERA Concert Series.

For over 20 years, Menahem Pressler, pianist, Isidore Cohen, violinist, and Bernard Greenhouse, cellist, have combined their individual virtuosity to create an extraordinary ensemble. Their superb musicianship has only increased with the years. As noted by Robert Sherman in the New YorkTimes last year, "There are a number of fine young trios on the concert scene these days, but the Beaux Arts Trio's appearance at Hunter College yesterday afternoon reminded us who still reigns supreme."

The Beaux Arts Trio made its official debut in 1957 at the Berkshire Festival in Tanglewood and had the distinction of performing there for nine consecutive seasons. At that time, maestro Charles Munch wrote that "the marvelous musicality of these three artists has been unknown in trio playing for many years. They are worthy successors of the last great trio—Thibaud, Casals and Cortot." They also won high praise from Arturo Toscanini who said, after one of their performances, that "it was an inspiring experience, fine cham-

ber music with impeccable taste and musicianship."

The prize winning ensemble has recorded for Philips all the Haydn, Mozart, Beethoven, Brahms, Mendelssohn, Ravel, Tchaikovsky, Op. 50, Schubert and Dvorak trios. They are at the top of every best selling classical list throughout the United States and Europe.

The program for the concert, beginning at 8:30 p.m., will include the Haydn Trio in A major (H.XV, No. 18), the Ravel Trio in A major, and the Schubert Trio in B flat Op. 99.

Single adult admission for this performance is \$5, senior citizens and students \$2, persons under 18 years of age \$1. Block tickets, good for any concert, are \$16 for the first 5 tickets and \$3 for each additional ticket. They may be purchased at the door, or from any of the following persons:

	Ext.
Don Lazarus	4643
Arnie Aronson	2606
Clemens Auerbach	3985
Steve Schwartz	3100
Geoffrey Hind	3400
Myron Ledbetter	3418
Dick Holroyd	4329
Ed Popenoe	3622
Maria Pavlova	3634
Howard Gordon	3740



Beaux Arts Trio of New York

TUNE IN!

Ouestion:

My question is about safety storage cans for flammable liquids. While I can understand the reason they are useful once the liquid is in, I can't help but wonder if anyone from safety has ever tried to transfer 5 gallons of acetone or similar fluid into one. The spring loaded lid resists the use of a funnel, sometimes ejecting funnel and liquid all over - a considerable hazard right there. If there is an easy way to do this I would like to know it. I also think that they would be better accepted by all of us if not for the problem of filling.

Answer:

We recognize that convenience to the user is frequently more important than the safety features of any safety appliance and we concur with all that the questioner has stated.

The spring loaded lid will stay open when a safety can is being filled by any cylindrical shaped device, such as the nozzle on the hose of a pump or a faucet installed in a drum. Most industrial transfer of flammable liquids to safety cans generally involves drums or larger tanks and it was for this market that the safety can was developed.

The spring loaded lid is one of the major safety design features of a safety storage can. The questioner has highlighted a serious deficiency with this design and it appears a basic design change is required. A sizable percentage of the market for safety cans transfers flammable liquids from containers appreciably smaller than drum size. For example, it takes two hands to pour from a five gallon bottle. Since the typical, conically shaped funnel is easily squeezed out of the safety can filling spout by the spring loaded lid, a third hand is needed to hold the lid open. Thus safety considerations would dictate that filling a safety can from a five gallon bottle is a two-man operation.

Funnels with cylindrical cross sections, such as Justrite Model #11102 with a ¾-inch OD flexible hose and 8-inch overall length, may be utilized to alleviate the problem.

We recognize that the above response is not completely satisfactory. One man, safe transfer of flammable liquids to safety cans should always be possible. Accordingly, we are forwarding the original question to Underwriters' Laboratories, Inc. and the three major manufacturers of safety cans. Meanwhile, we are limited to using safety cans which are commercially available, with their inherent deficiencies.

-Dennis Kirson
Safety & Environmental
Protection Division

Call For BNL Artwork

The 7th BERA Members' Art Exhibit opens at noon on Wednesday, November 8 in Berkner Hall. All BERA members including employees, related family 16 years of age and over, and retired employees are invited to contribute their work to the exhibit. Two categories, pictures and sculpture, will be displayed in the exhibit which runs during November 8 to November 17. Contributions done in water color or oils, drawings and graphics will be accepted under the picture category. No crafts may

be submitted for this exhibit. A craft show is planned for 1979.

In order that a printed catalogue can be ready for the opening, the Art Committee requests that you complete two forms for each work you intend to exhibit, and return them to the BERA Sales and Services store in Berkner Hall no later than October 24. Exhibitors will be contacted as to details of where to deliver and pick up their work. The Committee can accept only two works from each contributor.

Return To BERA Sales and Services Office - Berkner Hall

Name of Artist
Title of Art Object
Medium
Name of Artist
Title of Art Object
Medium

Published weekly for the employees of

BROOKHAVEN NATIONAL LABORATORY

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40 Brookhaven Ave., Upton, N.Y. 11973 Telephone (516) 345-2345

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Service Awards September

Thirty Years

Director's Office
Chemistry
Accelerator
Physics

Twenty-Five Years

James EganEn	ergy & Environment
Herbert Iversen	
Eugene C. Raka	Accelerator
George H. Vineyard	Director's Office

Twenty Years

Audrey D. Biittner	Physics
Walter G. Hansen	Medical
Lorraine E. Harty	Staff Services
James R. Miles	Plant Engineering
Raymond F. Reilly	
Max Schmaeler	
John M. Sullivan	Accelerator

Ten Years

Constantino Buzzeo	Central Shops
Arthur Forman	Medica
Gary E. Jayne	Reactor
Wenzel J. Rowan Supp	
Richard B. Schonberg	

New Isotopes

(Continued) isotopes whose existence can be predicted but which have never been identified. One of the problems they expect to encounter, says Haustein, is the fact that the isotopes will probably have very short half-lives, and much faster chemical techniques will be required to separate them from target materials and fission products.

The production and study of new isotopes plays an important role in advancing basic nuclear science research - especially in the area of nuclear systematics, says Haustein. By comparing the actual decay properties of a new isotope with existing theoretical models of how such a nucleus should behave, scientists can use each new isotope to test and improve their theoretical nuclear models.

Reminder

The Suffolk Symphony will present a free concert in Berkner Hall on Sunday, October 1, at 8 p.m. The program will feature French Horn soloist, Robin Graham, and will include popular favorites by Rossini, Ponchielli, Verdi, Liszt and Johann Strauss.

DOE's Energy Saving Tips

- Try to use major appliances such as washing machines or dishwashers during early morning or later evening hours whenever possible. By performing these household chores at such off-hours, you can help relieve the heavy demands made on utilities during the day by offices, schools, and factories
- Try using glass or ceramic dishes for baking in the oven. You'll find that you can cook at temperature settings as much as 25 degrees lower than required for cooking similar meals in metal pans.
- Whenever practical, use the more efficient fluorescent lights in place of incandescent lamps. One 40-watt fluorescent tube provides more light than three incandescent bulbs, yet uses less electricity.

Mixed League Softball Champions



The E-Z Riders beat the O-Kays 14-5 in the playoff. The O-Kays played a great game, but a double play by Nick Masciopinto and Larry Musso, a spectacular running backward catch by Gary Goldstein put a stop to their hitting streak. The champions are (left to right) back row: Debbie Fannon, Rich Zahra, Marijane Gillette, Linda Zahra, Doug Gillette, Becky Sutter, Larry Musso. Front Row: Nadine and Gary Goldstein (with team mascots Baggins and Bombur), Mickey Haller, Nick Masciopinto, Pat Webster, Bobby Callister and George Morgan. Mike Hahle was not present for this photo.

On Tour In Finland

Arthur Scholtz, a technician in AGS, has sung with the Long Island Symphonic Choral Association (LISCA) for about seven years. Earlier this month, he and four other members of the BNL family (Jane Danby, June Adams, Ruth Hirsiger and Alice Perez) returned from a concert tour of Helsinki, Finland where they gave 5 performances of "The New Hope Jazz Mass," by Heikki Sarmanto and "The Mass for St. by Gregg Smith, founder of Peter's," LISCA.

Three performances by the 60-voice chorus were given in the Rock Church of Helsinki, so named because it is hewn out of solid rock. "It's quite a place," Arthur said. The LISCA concerts, covered by Finland radio and television, were broadcast to neighboring European countries and received newspaper coverage in Italy and Sweden. The group made a 31/2 hour bus ride out of Helsinki to give additional road appearances in Tampere and Turku, major Finnish cities. "We sang to enthusiastic audiences each time," said Arthur, "and were sold out every night."

Smith, the American composer, and Sarmanto, of Finland, first met when Smith's "Mass for St. Peter's" was presented by LISCA in that New York City church, which commissioned the special mass for its dedicatory service. Sarmanto heard LISCA's performance of the Mass and suggested that he and the chorus combine efforts to present his recent work, "The New Hope Jazz Mass," in Helsinki. This month's successful concert in Finland culminated work by groups on either side of the Atlantic.

Of the country and its people, Scholtz said, "the cities are orderly and immaculate, and the people are unassuming, intuitive and extremely honest." Travel to almost anywhere in the country is easy by electric train, he continued, and most suburb dwellers get around by bicycle. "We were accommodated in a summer retreat with a picturesque view of the bay," continued Arthur, "everything was beautiful -I'd like to go back as a tourist."

Assertiveness At BNL

Another series of Assertiveness Workshops conducted by Francine Berger has been scheduled. The Workshop Meetings will be held on October 6, 13, and 20, from 1:00-2:30 p.m.

The employees who attended this program last spring felt it was a valuable and rewarding experience.

The objective of the workshop is to improve the participant's ability to communicate and interact with others, both on the job and in their personal lives.

This program is open to all employees, work permitting. Enrollment forms are available at the Personnel Office reception desk and must be completed by Monday, October 2. For information please call Robert D'Angio, Extension 2878.

Arrivals & Departures

Arrivals

Malihel Afhashteh	Accelerator
Charles J. Gerbino	Accelerator
David Levesque	Central Shops
Luis R. Rios	Accelerator

Departures

Kevin Barnes	Plant Engrg.
James A. Bell	Medical
Gilbert M. Brown	Chemistry
William D. Ellenson	Physics
Hans Hirsiger	Medical
Tun-Hsu McCoy	Energy & Env
Paul J. Melvin	Medical
Daniel J. Mitchell	
Nancy A. Monastero	Chemistry
Charles Pukit	Accelerator
Drew A. Gillett	Energy & Env.
William H. Sachs	
John A. Strozier, Jr	Physics
Glenn A. Zorn	

Cafeteria Menu

Week Ending October 6, 1978

Monday, Oct. 2	
Corn chowder (cup)	.30
(bowl)	.40
Beef chop suey on rice	1.30
Scrambled eggs, sausages	
and French fries	1.15
Hot Deli - Pastrami (on bread)	1.15
(on roll)	1.25
Tuesday, Oct. 3	
Beef noodle soup (cup)	.30
(bowl)	
Knockwurst and sauerkraut	1.15
Roast chicken w/stuffing and 1 veg.	1.20
Hot Deli – Veal pattie & peppers hero	1.25
Wednesday, Oct. 4	
Cream of potato soup (cup)	.30
(bowl)	
Braised meatballs à la mode	
w/buttered noodles	1.25
Fried fillet w/French fries	1.25
Hot Deli - Roast beef (on bread)	
(on roll)	1.35
Special - Salad bar w/garnishes	
Thursday, Oct. 5	
Chicken vegetable soup (cup)	.30
(bowl)	
Eggplant parmesan w/tossed salad	1.40
Sauerbraten and potato pancake	1.45
Hot Deli - Italian sausage	
and peppers hero	1.25
Friday, Oct. 6	•
Fish chowder (cup)	.40
(bowl)	
Spaghetti w/clam sauce	1.10
Breaded pork chop and 1 veg.	1.50
Hot Deli – Smoked tongue (on bread)	1.15
(on roll)	1.25
(on ron)	1.43

Selected Reading

Nature 275, September 14, 1978 Science at the UN: Coordination or chaos? P. Collins, 84-5

New Sci. 79, September 14, 1978 Gentlemen v players. J. Meadows and T. Fisher. 752-4 What's so funny? H. Pollio. 774-7

Hockey Ticket Buyers Please Note:

The first day of ticket sales for the Islanders regular season games has been postponed from Tuesday, October 3, to Thursday, October 5, same time, same place - 8:00 a.m., BERA Film Service Office.

Pool/Gym Closing

The pool/gym complex (including locker rooms) is scheduled for a one-day maintenance closing on Saturday, October 7. It will not be necessary for lockers to be emptied.

No admittance will be permitted.

Football

Quarks 25 - Players Pool 12

Bob Casey threw touchdown passes to John Polcha, Charlie and Fletcher Johnson and Gary Mosley to lead the Quarks to victory

> Sweathogs 20 - Chickens 12 Roga 26 - Tee Dees 13

Flying Club

There will be a second meeting to discuss plans to organize a BNL Flying Club on Monday, October 2, at 12 noon in Room B, Berkner Hall.

All pilots and perspective pilots are urged to attend.

Bowling

Gold League

After two weeks of bowling the Personnelities are in first place. High games for the evening were Marsha Kipperman 205, Kay Conkling 176, Lynn Tice 160.

Congrats to Doris Pion for making a 2-7-10 split.

Pink League

Mary Grace Meier had a beautiful night bowling 170/159/183 for a scratch series of 512. Not far behind was Ellie Kristiansen who bowled 193/182 for a scratch series of 505. Barbara Pfeiffer came up with two good games of 165 and 160. Ellie Adams had a 168, Fran Briening 163 and Pat Castleman 145.

Team #2 (Debbie Meier) is in front but the Pinsplitters are only one point behind.

Purple & White League

Jim Griffin had a high game 233 and high series 560 for the night. Dick Murgatroyd had a 213, Ed Meier 205, James Petro 202 Caryl Mac Dougall had high series for the ladies with a 516. Other high games were Liz Bull 182, Nancy Erickson 170, Gloria Brown 176, Kathy Carter 173, Irene Sperry 173.

Red League

The 76'ers won 11-0 over the Pinball Wizards by knocking down 3028 pins. R. Larsen (256/213/656) averaged 218. Morris rolled a 205. This Isa team (3013 pins) also won 11 from the Freon Loaders. R. Barberich (216) had a 572-647 series, and W. Kollmer a 551 scratch.

The Old Timers won their match 8-3 over the Dyno-Mites. R. Adams had a 215. The Anachems split 6-5 with the Trouble Shooters. The Sandbaggers took only 4 in their Cosmos contest. E. Meier (200) 585-657 series, averaged 195 for the night. R. Jones had a 202. The Designers only took 3 in a match with the Old Timers II. C. Zavesky bowled a 200.

Hospitality Committee

Due to the Jewish holiday on Monday, October 2, the morning coffee will be held the following Monday, October 9, from 9:30 to 11:30 a.m. at the Brookhaven Center.

Please come and bring the children. Babysitting will be provided at no charge. It is suggested that you bring along a toy or two for your children to play with.

Reports Available

The following reports are now available to the Laboratory Staff and to Affiliates of the DOE, AUI, and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. Staff members should call Ext. 3484.

Accelerator Produced Nuclides For Use In Biology And Medicine. K.L. Karlstrom, et al

The Energy Situation In The Mid-Atlantic Region. J.S. Munson, et al

BNL-50746 A Numerical Study Of The Weak Element Method Applied To The Helmholtz Equation. C.I. Goldstein, et al

Proceedings Of The Workshop On High Temperature Solid Oxide Fuel Cells. H.S. Isaacs, et al BNL-50768

Estimation Of Sectoral Prices In The BNL Energy Input-Output Model. R.G. Tessmer, et al BNL-50769

Proceedings Of The Heavy Ion Fusion Workshop. L.W. Smith

BNL-50779 Flash Hydropyrolysis Of Coal. Quarterly Report No. 3 For The Period July 1 To September 30, 1977. M. Steinberg, et al

BNL-50781 \$8.00 Radiation Effects On Ion Exchange Materials. T.E. Gangwer, et al

BNL-50783 Annual Highlights Environmental Programs Of The Department Of Energy And Environment. B. Manowitz

BNL-50786 Acid Rain Research Program Annual Progress Report July 1976 Through September 1977. L.S. Evans, et al

BNL-50788 Introduction To Graphics At The CSCF. T.S.

Development Of A Glass Polymer Composite Sewer Pipe From Waste Glass. L.E. Kukacka, et al

BNL-50793 Environmental Control Technology For The Flash Hydropyrolysis Of Coal. Quarterly Progress Report No. 1 June 20, 1977 To September 30, 1977. M. Steinberg, et al

Environmental Control Technology For Atmospheric Carbon Dioxide. M. Steinberg, et al

BNL-50796 Radiological Analyses Of Marshall Islands Environmental Samples 1974-1976. N.A. Greenhouse, et al

Time-Of-Day Pricing Of Electrical Energy: Does It Promote The National Interest? A.L. Berlad, et al

BNL-50800 An Analytical Framework For The Assessment Of Energy Resource and Technology Options For Developing Countries. Policy Analysis Division

BNL-50802 A Niobium-Tin Deals Toroidal Magnet System For A High Field Ignition Test Reactor. J. Powell, et al

BNL-50803 Cryocondensation Pumping. T.S. Chou, et al BNL-50807 \$6.50 Hydrogen Energy Assessment. September 1977.

F.J. Salzano, et al

\$4.50 Regenerative Process For Desulfurization of High Temperature Combustion And Fuel Gases. Quarterly Progress Report No. 7 Octob

December 31, 1977. R.T. Yang, et al Quark Line Diagrams, Rules and Some Recent Data. S.J. Lindenbaum

BNL-50816 \$4.00 Brookhaven National Laboratory Burner-Boiler/Furnace Efficiency Test Project - Annual Fuel Use and Efficiency Reference Manual

Hydronic Equipment. J. Batey, et al \$4.50 Conceptual Design Of A Heavy Ion Fusion Energy Center. A.W. Maschke

BNL-50818 The Brookhaven Automatic Sequential Precipitation Sampler. G.S. Raynor, et al

\$5.25 Flash Hydropyrolysis Of Coal. Quarterly Report No. 4 For The Period October 1 To De-

cember 31, 1977. M. Steinberg, et al RNL .50822 \$6.00 Energy Systems Studies Program - Annual Re-

port Fiscal Year 1977. M. Beller et al

Experimental Data From Analysis Of Sequential Precipitation Samples At Brookhaven National Laboratory, G.S. Raynor, et al.

BNL-50827 \$4.50 Encapsulation Of Phase Change Materials In

BNL-50835

BNL-NUR FG-50855

P. Colombo, et al

Placement Notices

(3) outside applicants.

ent Laboratory employees.

celerator Department.

Concrete Masonry Construction. Progress Report No. 1 August 1977 - February 1978. M.J. Sansone, et al

Development Of A Glass Polymer Composite

Sewer Pipe From Waste Glass. Progress No. 7

Evaluation Of Isotope Migration - Land Burial

Water Chemistry At Commercially Operated

Low-Level Radioactive Waste Disposal Sites.

Progress Report No. 6 July - September 1977.

Classified

Advertisements

The Laboratory's placement policy is to select the best-

auglified candidate for an available position, with consid-

eration given to candidates in the following order of pri-

ority:(1) present employees within the department, with

preference to those within the immediate work group; (2)

resent employees within the Laboratory as a whole; and

Each week, the Personnel Office lists new personnel

placement requisitions. The purpose of these listings is, first,

to provide open placement information on all nonscientific

staff positions; second, to give employees an opportunity

to request consideration for themselves through Personnel;

and, finally, for general recruiting purposes. Because of

the priority preference policy stated above, each listing

does not necessarily represent an opportunity for all

candidates. As a guide to readers, the listings are grouped

according to the anticipated area of recruitment, as indi-

cated below. Except when operational needs require other-

wise, positions will remain open for one week following

For further information regarding a placement listing,

contact the Personnel Placement Supervisor, Ext. 2882.

LABORATORY RECRUITMENT: Opportunity for pres-

781. SECRETARY - AAS degree or equivalent capa-

bilities. Requires excellent skills, including shorthand.

Heavy technical typing. Will be secretary to two

groups of theoretical scientists. Physics Department.

microbiology or biology or equivalent capabilities.

Responsibilities will include preparation of cell cul-

tures and media. Part-time position. Biology Depart-

OPEN RECRUITMENT: Opportunity for present

783. SENIOR COMPUTER SCIENCE ANALYST - Re-

quires BS or its equivalent in math or a science (ad-

vanced degree preferred) and extensive background

in specification and operation of computer systems,

developing software for problem solving, data hand-

ling and information retrieval. ISABELLE Project, Ac-

784. COMPUTER SCIENCE ANALYST - BS or equiv-

alent capabilities. Demonstrated knowledge of

FORTRAN and familiarity with DEC PDP-11's.

Knowledge of chemistry and math desirable. Chem-

785. HVAC DESIGN ENGINEER - Demonstrated

ability in the design of HVAC, heating and plumbing

786. BIOLOGY ASSOCIATE - BS or MS in biology

or cell biology or equivalent capabilities. Responsi-

bilities will include working with cells, macromole-

cules and isotopes, as well as light and electron

787. HEAVY EQUIPMENT MECHANIC OPERATOR -

Ability to maintain and operate all heavy equipment,

788. REFRIGERATION AND AIR CONDITIONING

68 CHEVY IMPALA - 307 eng, auto, p/s, conv, good

71 TOYOTA CORONA - mechanic's special, needs

motor, body good cond, 4 new tires. \$200. 475-

66 VOLVO - Suburban Wagon, 4 cyl, fm radio, a/c,

74 FIAT - 124 Sport Coupe, 1800 cc, 5 spd, am/fm 8

74 MERCURY COMET - 4 dr, a/c, 36,500 mi, excel

cond, many new parts. \$2675 firm. Chandra, Ext.

CORVETTE HUB CAPS - excel cond, set of 4. \$20.

64 MERCEDES - 190D, 4 spd, 4 dr. \$3000. 732-4193.

BRAKE DRUMS - set of 4, resurfaced, fits Dodge and

Plymouth cars w/14" wheels. \$40 or best offer. Joe,

WHEEL RIMS - (2) 14", 5 hole, new, \$12; Buick Regal

CHAINS - (2) sets of emergency strap-on chains, excel

71 VW - Fast back, standard, good cond, must sell.

78 YAMAHA - 650 Spectal, 3000 mi. \$2000. Kilthau,

78 KAWASAKI - K2650, 4 cyl, 700 mi, like new, elec-

69 FORD - custom, 4 dr, 351 V8, auto, p/b, p/s, new

tires and brakes, 107K mi, runs good. Ext. 4799 or

68 AMBASSADOR - many new parts, needs some,

work, running. \$100. Peggy, Ext. 2907 or 744-7526

14" hub caps (4) like new; \$12. Ext. 4701.

good tires, clean, must sell. 399-3965 after 6.

trk stereo. \$1700. Sawang, Ext. 2215.

3509 or 751-3885 after 6.

Pete, Ext. 3868 or 878-1225.

cond, \$2/set. Pete, Ext. 4324.

tric or kick start. 727-8929 after 5:30.

\$550. 281-9274.

369-2413 after 6.

systems required. Plant Engineering.

microscopy. Biology Department.

including cranes. Plant Engineering.

running cond. \$375. 298-4475 after 5:30.

ENGINEER - Plant Engineering.

Autos & Auto Supplies

Laboratory employees and outside applicants.

782. RESEARCH SERVICES ASSISTANT - AAS in

January - March 1978. L.E. Kukacka, et al

66 OLDSMOBILE - Convertible, 454 eng, needs some

72 SUBARU WAGON - 80,000 mi, 35-38 mpg. \$900. Manny, Ext. 4470 or 363-6787 after 6. 68 CHEVY IMPALA - radio, auto, new carburator,

fuel pump, fan belts, air filter. \$400 or best offer. Luis, Ext. 4851.

72 INTERNATIONAL - 4 whi drive, excel cond, 4 extra beach tires. \$2500. 878-2545.

68 VW - rebuilt motor, runs excel. \$650. 286-1463.

GM - magnetic impulse (transistorized) ignition distributor for Chev V8, w/amplifier and wiring, good cond. \$30. 289-5012 after 6.

73 COUGAR - 2 dr, brown, a/c, p/s, p/b, am/fm 8 trk. \$2200. 286-8356 after 6.

77 PLYMOUTH - Fury Sport, am/fm 8 trk stereo, p/s, p/b, a/c, 18 mpg, buckets wire wheels, A-1 cond. \$4300 firm. 588-4703.

73 BONNEVILLE - Motorcycle, 750 cc, 5 spd, disc brakes, excel cond. \$1050 firm. 924-3236.

71 BUICK - LeSabre, immac cond in and out, 60,000 mi. \$1400, 581-7656.

68 CHEVY IMPALA - Convertible, 327 eng, runs, needs work. \$100. Ext. 3934 or 399-4258.

76 TOYOTA - Corolla SR5 liftback, 43,000 mi, excel cond, green, radials, 5 spd trans. \$3200. Robin, 399-

75 TOYOTA CELICA - 5 spd, yellow w/blk vinyl top, blk int, radials, rally wheels, am/fm stereo. Best offer over \$2000. Frank, SU5-9841 or CA1-3762 eves.

69 CHEVY VAN - 6 cyl, auto, good running cond. \$550. Joe, Ext. 2832 or 427-9362 eves.

70 PONTIAC LEMANS - needs work. Best offer. HR2-2621 eves.

76 OLDS - Cutlass Supreme Brougham, mint cond, all power, a/c, am/fm stereo, tilt wh. landau roof. sport mirrors and wh, 37,000 mi. Frank LaPlaca, Ext. 2461 or 331-9139 after 6.

76 CHEVY - ½ ton, auto, p/s, p/b, rust proofing, sliding rear window, must sell. \$3600. 281-9274.

54 CHEV - 2 dr. power glide, body good, tires new, restorable. \$400 firm. 581-7275 after 6.

72 GREMLIN - good running cond, needs some work. \$250. John, Ext. 3292 or 286-1348.

SNOW TIRES - (2) E78-14, like new, Dynaglass X.S.T., make offer; 2 E78-14 tires, like new, make offer. 821-0275 after 6.

73 FORD TORINO - 4 dr, r&h, auto, a/c, p/s, p/b. \$1100. 744-5849.

73 SAAB - 99LE, rebuilt auto trans and rebuilt eng, must sell to pay above bills, excel body, runs excel. \$2900 firm. Tom, Ext. 4483, after 6:30 929-8736.

67 FORD - Country Sedan, p/s, p/b, auto, new steelbelted radials, good transportation, orig owner. \$475. Don, Ext. 3397 or 289-0265. 68 OLDS - 442, p/s, p/b, mag wheels, 8 trk, mech

perfect, body mint. \$1200. Don, Ext. 3397 or 289-71 VW - Super Beetle, new engine, clutch, muffler,

back drums, shoes, 4 tires, excel running cond, needs paint. \$1300 firm. 821-9419.

TIRE CHAINS - for VW. \$7, Ext. 2831.

70 BUICK - Electra, new trans, excel running cond. \$795. Sol, 744-4090 between 9:30-5:00 p.m.

75 HONDA - GL1000, beautiful cruising, custom seat, custom headers, 6,000 mi, sacrifice. \$1500 firm. 281-6627 after 5.

VOLVO 144 - parts only; Midget parts, 73,67,63. Cliff, Ext. 3514 or 585-6811 eves.

67 CADILLAC - 2 dr, a/c, all elect, low mileage, good cond. \$550. 325-0482.

67 VW - 14,000 mi of rebuilt eng, mag wheels, 60 series tires, flared fenders, needs body work on one fender. \$300. 878-4525.

68 DODGE CORONET - 9 pass, 81,000 mi, V8, radio, roof rack, snows, good cond. \$450. Ext. 3089 or 7951. Must sell by Oct. 15.

74 PEUGEOT - 504, stnd. excel cond. new radials. plus 2 snows w/studs, Blaupunkt, am/fm radio. \$3800. Ext. 2921 or 728-9106.

64 VW - Beetle, sunroof, new battery, extra tires and wheels, needs clutch work. \$200. Ext. 2046 or 924-4058.

69 VW BUG - good body and frame, engine just rebuilt, but not running, car is being sold for parts

only. \$150. John, Ext. 3531 or 821-1296. HONDA 450 cc - very good cond, \$800; 3-13" 4 lug

rims w/snow tires, \$15. Marie, Ext. 2857 68 FORD WAGON - plenty rust but plenty mi left,

many new parts, reliable. \$500. Ext. 4107, 472-0721. 68 REBEL WAGON - 6 pass, 6 cyl, manual trans, econ, running. \$150. Jeff, Ext. 3400.

Boats & Marine Supplies

21' CLIPPER - fiberglass sloop, sleeps 4, 6 hp Johnson outboard, trailer. \$3500 or offer. Ext. 3855.

24' SUMNERCRAFT SKIFF - hardtop, new 135 hp, Palmer (6), 878-1805.

 ${\tt RUBBER\ RAFT\ -inflatable,\ one\ man,\ yellow,\ good}$ cond. \$5. 289-5012 after 6.

BOAT - Hobie Cat, 14 ft, complete w/trailer, excel cond. \$1100. 581-7656.

FUEL FILTER - Fram HPG-1 w/element and stainless steel flex lines, excel cond.\$10. 289-5012 after 6.

12' DUCK BOAT - Barnegat Bay Sneak Box, including trailer. \$275. Ext. 2911 or 581-4238.

HEATER - boat heat-pal, alcohol, 900 to 3600 BTU/ hr. never used, \$30, Ext. 4692.

12' ALUMINUM BOAT - and 5½ hp Johnson eng, many extras. \$300. Barnett, Ext. 4581 or 281-5296.

22' PENYAN - end of season sale, Tri Hull Cutty Cabin tunnel drive, excel cond. \$4938. 587-3192 after 5.

1970 JOHNSON - 20 hp outboard, short shaft, power head good for parts, lower unit in good op-

erating cond. \$75. John, Ext. 3292 or 286-1348. MOTOR BOAT - fully equipped. \$650. Further info,

Miscellaneous

YARD SALE - misc collectibles, rain or shine, Sept. 29 and 30th, 369 Washington Ave., Patchague.

COURT SALE - Sept. 30th, 9:30 a.m., Sandpiper Court, Shoreham. 821-0686.

BUNK BEDS - solid rock maple twin beds, springs, no mattresses, \$25. Kathryn, Ext. 2544.

YARD SALE - Sept. 30, 10:00-5:00 p.m., Zophar Mills Rd., Wading River, children's clothes, toys, play pen, high chair, coffee table. For info, 929-

CRAFT SALE - Sept. 30, Oct. 1, 10 to 4 p.m. 24 Lower Cross, Shoreham,

YARD & GARAGE SALE - Sept. 29 and 30th, Halsey Manor Rd, Manorville. Rain or shine, (large group), furniture, tools, household, lots more.

29 FAMILY YARD SALE - Sept. 30 and Oct. 1st, 10 a.m. to 4 p.m., 515 Terryville Rd, Terryville.

YARD SALE - (5 families), Oct. 14 and 15th, 10 to 4 p.m., Giant Oak Dr, Ridge (next to Patriot Security). FOR SALE - household items, 281-6489.

6' PINE - trestle table and deacon's bench. \$250.

BATH TUB - mod, 5 ft, L.H. drain, white color. \$20 firm. 585-7094 after 6.

TV - 19" color, Sears best w/stand, excel picture, must sell. \$250. 475-3598. LANDSCAPING BUSINESS - vehicle, Hahn 4 hp

tiller Toro lawn mower w/grass catcher, 36" spreader, customers, discount on materials. \$1750. 325-1033.

DOUBLE BED - \$10; table w/5 chairs, \$20; cassette radio recorder, \$10; wine, water and beer glasses, cheap; electric blanket, \$5; 2 queen size blankets, \$5; and little stuff. 744-4305 or Ext. 3583.

FREE - Pet rabbit, complete w/hutch, 744-6606.

TV'S - (2) one color and one B&W, both need some work, also 2 TV tubes, brand new, 24 LQ6 and

SCREEN - storm door, aluminum, 3' wide, excel cond. Best offer. S. Katcoff, Ext. 4341 or 475-4005.

CAMERA - Polaroid SX70, top of line, new cond. \$65. Cas. Spulecki, Ext. 4278.

TRUMPET - Buscher Aristocrat, w/mutes, brushes, valve protector, etc., excel cond. Bill, 878-0797.

PATIO DOORS - 6'x6'8" single pane sliding doors w/frame. \$45. Steve, Ext. 2006.

CALCULATOR - Melcor Model SC-635 Scientfic, like new. \$20. Ext. 4701.

DREXEL - walnut and cane stereo/phonograph console, cabinet excel cond, component needs work. \$90. Ext. 2484.

SCREENED TENT - 12'x12', used twice, excel cond. \$40. Bob Wieser, Ext. 3080. PACHYSANDRA - good ground cover, 55 plants for

\$5, 110 for \$9. 744-5448. TRUMPET - Buscher Aristocrat w/mutes, brushes,

valve protector, etc., excel cond. Bill, 878-0797. OAK CHAIRS - (4) press back, cane seat, ca. 1910. \$300/set, 289-5607.

KAYAK - in good cond w/spray skirt. \$170. Steve, 286-0975 after 5.

BABY STROLLER - deluxe, chrome, good cond, \$30 garage doors, 9'wx7'h, overhead wood, includes all hardware, \$50. Jeanne Weber, Ext. 2003 or 472-0086 after 6.

TAP SHOES - child's size 12½, like new, \$8; rocking seat, young version of rocking horse, solid maple, \$10. Ext. 4695.

BABY ITEMS - walkers and swing-o-matic, \$5 ea; 3' bed rail, \$3; Hanscraft Coolmist humidifier, \$5. Bill, Ext. 2022.

FISH TANKS - 10 gal hood, stand fully equipped, \$15; 20 gal tank, stand, also fully equipped, \$25. Ext.

ELECTROLUX - rebuilt w/1 yr warrantee on motor and new hose also parts and service on your machine. Al Campbell, Ext. 3354.

DRESSES - cafe length bridesmaid, matching crowns (dark green-light green), size 8-10. 584-5919.

MAKEUP MIRROR - Clairol lighted; 4 real-life light settings; canning jars (glass top), quarts. Ext. 2926 or 584-5919.

DRESSER - w/wood casters, \$25; (1) ea mahogany and maple single bedstead, \$15 ea; (1) folding shopping cart, \$5; (1) lg rectangular basket, \$10. Ext.

BABY ITEMS - Gerry carrier, \$8; like new infant seat w/handle, \$8 (orig \$16); 3 tricycles, \$8 ea. 744-2514. TRUCK CAMPER - 91/2 Hornet, immaculate cond, fully

self contained, many extras. \$3500. 363-7261 DRYER - G.E. clothes, excel cond. \$50. 286-9249 afte

TEAKWOOD BUFFET - 7 ft long, w/shelves and drawers, \$150: Harvard Classics, 50 volumes, very good cond, \$140; 4 drawer file cabinet, \$30. 654-

Please see supplement for ads that do not appear on this page.

ZEUS - Alpha brake set w/drilled levers, excel cond,

\$30; Zeus-pump, presta valve w/umbrella clip, \$8.

DINING RM SET - maple, table, 5 chairs, extends to

LAWN VACUUM - 25" Yardman, 5 hp engine. \$75.

KITTENS FOR ADOPTION - 3 mos old, 1 male, 1 fe-

FUDGE - freshly made, plain and chocolate, \$2.50;

fruit and nut, \$2.80. It's delicious. Dianne, 345-3097.

MAPLE DROP LEAF TABLE - top 14"x34" long w/2

12" drop lvs, \$25; maple rocker, \$25; antique cabinet,

COLONIAL SOFA - and love seat, good cond. \$75.

CHILD BICYCLE SEATS - (2) in excel cond. Ronnie,

CAMPING EQUIPMENT - 3 burner stove, Coleman;

dining canopy; lantern pole. Ext. 3355 or 589-4874

Real Estate advertised for sale or rent is available

without regard for the race, color, creed or national

CALVERTON - Mobile Home, 12x65, 2 bdrms, w/w.

dishwasher (new) washer, dryer etc, 2 bathrms,

patio, shed, double driveway, excel cond, family

ROCKY POINT - "The Tides," 70' ranch on a beau-

tiful treed ½ acre, 3 bdrms, oak floors, fp, full bsmt,

patio, priv beach, golf, fully furn or not. \$45,000.

SHIRLEY - 2 bdrms, near Smith Point Bridge, artesian

well, secluded, owner must sell. Price negotiable.

BLUE POINT - 4 bdrm Cape, 11/2 baths, eik, lg gar-

age, pool w/deck, appl, fenced 1/3 acre, fin bsmt,

extras, near school, churches, library, stores, bus.

BELLPORT SOUTH - close to water, 4 bdrm Colonial,

park. \$12,500. 369-2236 after 5:30 p.m

RECORD CABINET - 28x15x29, \$18, Ext. 3583.

Dejan, 286-0854 after 7.

male. Art, Ext. 2434.

\$25. Walt, Ext. 4504.

Murdock, Ext. 4731.

Ext. 2980.

Real Estate

For Sale

origin of the applicant.

Low 40's. 363-6341.

85", 36" hutch. Peggy, 727-4859.

Miscellaneous

RECLINER - 3 positions, like new, \$35; 10' sofa, gold & green velvet, \$250. Emma, Ext. 2456 or 399-1005.

FLASH GUN - Honeywell Strobonar 880 w/a.c. adapter, battery case, filters, camera bracket. I. Meyer, Ext. 3038.

COLOR TV - 14" G.E., \$50, firm; 12 channel C.B. walkie talkie, 5 watt w/channel, 2 & 15 crystals, \$50. Bill, Ext. 3397 or 281-0557.

RUG - 12x19 bound rug, mulberry and gold, excel cond. \$75. 289-3896.

SKIS - 175cm Volkyl tiger skis w/Tyrolia jr. bindings, like new. \$75. Frank, 799-4896.

FURNITURE - sofa, \$95; chairs, lamps, pair of walnut tables, twin headboards, etc. 286-8234.

MAHOGANY CHEST - 44" w & 46" dresser, chest on chest, both have glass tops, very good cond. Hichborn, 929-4133.

QUEEN SIZE - mattress and box spring, Sealy, firm, excel cond. \$45, neg. Randall, Ext. 7923 or 981-2681 eves.

KITCHEN CHAIRS - (4) need to be recovered. \$30.

WHITE HOODED NUNS - (2) Finches, 8 mo. old, male & female w/cage. \$20. Dave, Ext. 4605.

BIKES - (2) 24" boys single speed, \$25; 26" girls 3 spd, generator, \$35. 286-8119.

SKATEBOARD - for serious skate boarders,, a logan board top, excel cond, no kick. \$12.744-2816 eves.

CHOPPER MINI BIKE - 2½ hp Briggs & Stratten eng, many new parts, excel cond. \$100 Rosie, 744-5069. LIVING RM SET - 3 piece dark pine, 1 chair, 1 couch

and 1 platform rocker, good cond. \$200. 472-9604 after 6.

CB RADIO - 23 channel, good cond. \$40. Pat, 924-7044.

WOOD STOVE - slow burning w/insul. stack, and h.w. coil, new cond. \$300; twin bed, maple (no mattress). \$20. Ron, Ext. 4082.

TV - 19" black & white, \$20. Ext. 3072.

WINDOW - double hung, 2 over 2, 32"x46", good cond. \$20. 289-0413.

SHUTTERS - wood, 16" wide, 3 pr 55", 4 pr 47". Ext.

TV - G.E., 19" b/w. \$15. Ext. 3228 or 345-2520 & ask

for person in room 27.
USED OIL BURNER - complete. \$15. Frank Rumph,

Ext. 4581 or 588-3565.

CHILD'S ORGAN - (Polychord selector), like new,

\$18; fur coat (fake fur) size 11-12 women's. J. Pontieri, 475-9131 after 5:30.

CROSMAN - 4x gun scope w/universal mounting, perfect cond. \$5. 941-4328.

TV - 12", 1 yr old, \$60; steam iron, \$8; hair dryer, \$5; vacuum cleaner, \$8; ice chest, \$6; scale, \$3. 744-4305

DOG FOR ADOPTION - shiny black Lab mix, 18 mo. old, neutered male, needs fenced yard or run. 878-

FREE - adorable kittens, 1 male, 1 female, both grey & white, 6½ wks old, litter box trained, very affectionate & need good homes. Sue, Ext. 2913 or 941-

PIONEER - TX9100 am/fm tuner, \$175; SX9100 power amp, \$225; Jensen speakers, Model 5, \$150; Model 6, \$225. 363-2614 after 6.

COFFEE TABLE - & 2 end tables, ash color, \$30; L/r chairs, \$20 ea or 4/\$60. 744-5867.

EVERGREENS - Alberta Spruces, 3 ft, \$7 ea; American Holly, 4 ft, \$3 ea; White Pines, 4 ft, \$4 ea; Canadian Hemlocks up to 4 ft, \$4 ea. You dig them up. 744-5867.

1971 KROWN POP UP - camper, sleeps 8, stove, ice box, heater, awning, extras. \$1150. R. Imossi, Ext. 4819 or 724-2886.

VICTORIAN - marble top table, 34½"wx25"dx29"h, \$275; antique oak pigeon hole desk w/attached bookcase, brass hardware, orig finish, \$375; double window, fits opening approx 67½"x38½", \$125. Bob, Ext. 3309 or Joyce, 654-1465 after 7:30.

BATTERY - Sears heavy duty 48, used only 5 mos. \$15. Lee, Ext. 2060.

SHOP FAN - 30", 2 spd, 860 & 1140 rpm, 1/6 hp direct drive motor. \$50. Ext. 2238.

ADULT 3 WHEEL BIKE - only used a few time. 878-2898

SPEAKER SYSTEMS - Altec Lansing model 846A, high efficiency 15" and horn pair for stereo. \$495. Bob, Ext. 4592 or 928-9359 eyes.

SEARS - 17" chain saw, \$60; lawn roller, \$5. Walt K., Ext. 4504.

ELECTROLUX - all attachments, power nozzle, factory reconditioned, like new. \$130.744-6482.

WINDOW - double hung, good cond, complete w/aluminum storms & screens, 25½"x39". \$30. Herman, Ext. 3353.

CHESTS (2) 42"x27" four drawers, and 32"x24". \$40 total. John, 744-5867.

BABY ITEMS - good cond, large dresser, \$20; infant seat w/handle, \$8; Gerry carrier, \$8; swing-o-matic, \$5; car seat, \$2.744-2514.

BEDSPREAD - (1) blue and white checked twin spread and 3 prs matching curtains, \$15; set table pads 48" round 14" leaf, \$15; 1 cool mist vaporizer, \$10; 3 bicycles, \$7 ea. 473-1157.

RIM - (1) Chevy Vega rim 13" w/very good tire, \$15; am radio for a Ford (78), new cond, \$15. 331-2779

ANDERSON - perma narroline picture sash, 5'8''x 4'6", new, unpainted. \$140. 331-2779.

GM - infant "Love" seat, almost new. \$18. Steve, Ext. 3822 or 929-6527.

TABLE TENNIS - fold up, like new. \$40. 472-1473. ALBUMS - thousands of deleted LP albums featuring Jazz, Big Bands, Vocalists, Broadway Shows, Movie Soundtracks, etc., send wants to Bill Gallagher, HFBR, #750.

TRADITIONAL - bdrm set, 3 pc, \$100; Melnor traveling sprinkler, \$10; elec food warm tray, \$5; rowing exerciser, \$5; baby equip and children's clothing and toys. Palais, Ext. 2907 or 698-0576.

BELT SANDER - grinder, 1½ wide belt. \$30. Carl, Ext. 3507.

PRESSURE COOKER/CANNER - Sears, used 4 times, instructions incl. \$35. Joe, Ext. 2251.

BIKE - ladies, 26", \$10; Rek-O-Kit turntable, Grado tune arm (wooden and beautiful). Best offer. Ext. 4560 or 473-2297.

CANVAS TENT - 5'x8'x43"h, sewn-in vinyl floor, used several seasons, good cond. \$15. Pete, Ext. 4324.

BABY ITEMS - bassinet, white w/wicker inserts, \$25; portable crib, wood, \$30; infant seat w/rocker, \$5; all new. Chris, Ext. 4612.

SOFA - 90" black modern. \$135. 744-5553.

KITCHEN SET - table and 2 matching chairs, \$35; earth pool filter, \$35; GM infants car seat, \$10. Pete, Ext. 3868 or 878-1225.

LAFAYETTE - Telsat SSB-75 sideband/am C.B., 12 volt power pack w/speaker, ½ wave antenna and 75' coax. \$125. Bill, Ext. 3397 or 281-0557.

CROCK - w/cover, 7½ gal, best offer; Cassette recorder/player, Sony TC66, \$15. Ext. 2831.

CHOPPER - Mini bike, 2½ hp Briggs & Stratton eng, many new parts, rebuilt, excel running cond. \$100. Rosie, 744-5069.

INSULATION - fiberglass, foil faced 6" thick R-19, 15"w, 40 sq ft rolls, 8 ea at \$8/rl. Carl, Ext. 3507.

YARDMAN - riding mower w/grass catcher, 5 hp, excel cond, 1975 Model. \$300. Susan, HR2-2621 eves.

1976 WINNEBAGO - 26', sleeps 8, roof and dash air, generator, fully carpeted, hitch, 440 Dodge, excel cond, sacrifice at \$12,875. 587-3192 after 5.

BEER - and wine making equipment. Ext. 2831.

GE - washer and dryer in very good working cond. \$160 for both. 929-6984.

COLLIE PUPS - AKC papers, eye checks, 1 male, 2 female, loveable. Joe, Ext. 4547 or 399-2018 eves. BUMPER POOL TABLE - with sticks and balls, excel

cond. \$40. Cliff, Ext. 3514 or 585-6811.

REFRIG/FREEZER · Norge 22 cu ft frost free, side-by-side, Coppertone, circa 1970, good cond. \$150.
Pat, 929-8443.

23 CHANNEL - CB base station, Lafayette w/antenna, cable and more. \$80 or offer. Ben, 286-2282 eves.

AGWAY SPACE HEATER - 15,000 BTU's, brand new cond, \$75; heavy duty elec power drill w/handle, ½" chuck, needs new cable, \$25. Marie, Ext. 3857.

SWIMMING POOL - components and accessories, pump w/strainer, sand filter, vacuum, lounge raft, chlorine floats, skimmer, asst hoses. Frank, Ext. 4659

RUG - 10'4"x6'2" black-white goat skin rug from "Cepelia", orig \$450, asking \$120; Early American antiuge round table, 48" dia. 929-6984.

FISH TANKS - assorted sizes, 10, 20 gal. Cliff, Ext. 3514 or 585-6811 eves.

GARAGE DOOR - standard size, wood, good cond,

WASHER - Kenmore, 6 cycle, heavy duty, self cleaning filter, white, like new. \$125. 821-0275.

BICYCLE - 16". \$20. 698-0576.

incl hardware. 281-4990.

TOYS - Fisher-Price doll house and Weebles haunted house w/accessories, \$5 ea; Sesame Street apt house w/accessories, \$7.50. 475-5150.

WOODEN SHUTTERS - 3 pair 18"x55", 1 pair 18"x 51". \$2 per pair. Ext. 4302.

HONDA 550 - 4 cyl, excel cond, stock, garaged, loaded. Ext. 3319 or 751-7140.

BOY'S BIKE - 20" hi rise, banana seat, excel cond, \$25; baby carriage, Thayer, very good cond, converts to car bed, frame collapsible, \$10; L.I. Fisherman, Mar. '72 to Dec. '77, over 250 issues, \$7. Susan, 981-1195 after 6.

CAMERA - Polaroid SX70, new cond. \$65. Cas Spulecki, Ext. 4278.

REFRIG-FREEZER - Norge 22 cu ft side-by-side, coppertone, 8 yrs. \$150. Pat, 929-8443.

RUG - 15'x8'x4", blue polyester, good cond. \$45. 286-1219.

CAR SEAT - \$8; swing, \$6; carriage, brown wicker Perego, excel cond, breaks down as car bed, \$60. 878-0333.

TURNTABLE - BIC 940 belt driven synchronous motor, new needle & cartridge, excel cond. \$75. AI, Ext. 3354

PORTABLE TYPEWRITER - \$10; 2 pr cross-country skis, 195 and 210 cm, \$15. Ext. 3583.

2½ baths, eik, fp, double garage, only 3 yrs old, so very well insulated, appl. 286-8097.

EAST MORICHES - 8 rm house w/detached 2 car garage, 1½ baths, w/w carpeting, attic and bsmt,

black top driveway, 1 mi from Bay, an older house

in a quiet neighborhood, low taxes. 878-2857.

CALVERTON - Townhouse, 3 bdrm, 1½ baths, d/r, l/r, fam rm, kit, 5 appl, central air, sun deck, exit 71

LIE. \$27,000. Ext. 4799 or 369-2413 after 6.

SOUTH SETAUKET - Strathmore "Framingham", 5 bdrms, 3 full baths, central air, underground sprinkling system, w/w carpeting, many extras. \$49,000. 698-1785 after 5 and weekends.

ROCKY POINT - moving out of state, many extras, 4 bdrm Colonial, eik, 2½ baths, fp, w/w carpeting, wood deck, ½ acre, priv beach. 744-1156.

SETAUKET - (Strong's Neck) 3 bdrm ranch, fin bsmt, central a/c, appl, w/w carpeting, draperies, storms, low taxes, beautifully landscaped, ¾ acres, winter water view, priv beach, moorings. \$75,000, 25% cash. Ext. 3918.

PATCHOGUE - Ig 2 family house plus small cottage in rear, must be seen, excel investment, owner will hold mortgage. \$75,000. 475-9139 or 286-8086.

CENTER MORICHES - 3 bdrm, 2½ bath, house on Forge River, bulkheaded cathedral ceiling in I/r and d/r, fam rm with fp, 2 car garage, 878-4880.

SHOREHAM - Colonial, 4 bdrm, fam rm w/fp, 2½ baths, laundry rm, hardwood floor, d/r, eik, full bsmt, 2 car garage, appl, close to school, quiet court. 821-9365 after 6.

BELLPORT - 3 bdrms, w/w carpet throughout, l/r, 12'x28' fam rm, eik, 3½ yr old, wooded lot. 286-8789.

SHOREHAM - custom built 4 bdrm Colonial, eik, d/r, w/w carpeting throughout, full bsmt and 2 car garage, 1 acre fenced, many extras. \$56,500. Ext. 3040.

RIDGE - 1 bdrm house 8/10 acre, set back from road, wooded, pond. \$24,000. 924-3997.

SHOREHAM - Custom Colonial, 3 bdrms, 1½ baths, den w/fp, eik, formal d/r, full bsmt, 2 car garage, patio, .43 acre, deeded beach rights. \$65,000. 744-1081.

MIDDLE ISLAND - Expanded Cape Cod, 4 bdrms, Ig I/r, separate d/r, eik, screened patio, 2 car garage, fin bsmt, low taxes, owner will hold mortgage. \$37,500. Ext. 3635 or 734-5343.

MASTIC - 3 bdrm Colonial, immacułate, d/r, l/r, eik, den, $1\frac{1}{2}$ baths, fence, 5 min from Lab, many extras. \$33,000. 281-2151 after 5:30 p.m.

ACRE BLDG PLOTS - (3) total frontage over 300 ft x over 400 ft depth, each acre 100x400 ft plus. Available singly. For details, 924-3236.

For Rent

E. PATCHOGUE - 2 bdrm apt in 2 fam house. \$255/mo (heat incl). Palais, 698-0576.

MT. SINAI - 3 bdrm house, fully furn, all appl, full fin bsmt, pool table, built-in bar, fp, 2 baths, 9 mi from Lab, Oct. 1st to Jan. 31st. \$375/mo plus util. Ext. 4260 or 928-5737.

PORT JEFF STATION - 2 bdrm Condominium Ranch, eik, central a/c, all appl, wooded, clubhouse, tennis, pool. \$350/mo plus util. 928-9403 after 6.

VERMONT CHALET - beautifully furn, stone fp, near Stratton, Bromeley, other ski areas, XC skiing on woodland trails, antiquing, fall foliage and winter rentals. Available weekends, weekly, seasonal. 757-5599 after 5.

CALVERTON - 3 bdrm ranch w/garage and full bsmt, 2½ yrs old. \$325/mo. 727-1165.

ROCKY POINT - near LI Sound, 2 bdrm house, no pets, \$270/mo; also available a Studio room, no pets, \$200/mo. Ext. 3583.

STRATHMORE RIDGE - 2 bdrm, 1½ baths, 5 appl, central a/c, no maint, prime location, 5 min from Lab, available immediately. \$295/mo + util. 878-

WADING RIVER - 3 rm furnished apt, heat, elec, and gas incl, Cliff and Dogwood Rds. 929-4176.

YAPHANK - Duplex apt, 2 bdrms, I/r, d/r, and full bsmt, heat incl, 5 min from Lab. \$340/mo. Available Nov 1st. 581-2909.

PORT JEFFERSON - 1 bdrm apt, 3 large rms, appl, w/w carpet, patio. \$275/mo. 821-0275.

MASTIC - 15 min from Lab, 8 rm house, 1½ baths, 4 bdrms, utility rm, 2 car garage. 281-6116.

NORTH SHIRLEY - 3 bdrm apt, full kit, full bath, d/r, .l/r, all util incl, 5 min from Lab. 924-8264 or 475-4930 eyes.

E. PATCHOGUE - 1 bdrm apt, on the water, privent, all util incl. 475-4930 eves.

Wanted

RACQUET BALL - members wanted, 20% discount ABC Racquet- Ball Courts. 475-3758.

HOUSE TO LEASE - Mother, 4 children require 3 bdrm house, Rocky Point or Sound Beach. Good references. 744-2461 eves.

SLIDE PROJECTOR - in working cond, must be very reasonably priced, needed for photo class. 286-3623.

BABYSITTER - mature, responsible sitter for infant, light housekeeping, Mon-Fri, own transportation, beginning Nov. 1st. References, Farmingville. 732-8724 after 1 p.m.

CAMERA - a used 35 mm SLR Olympus or equivalent is wanted. 744-2816 after 3.

ALUMINUM BOAT - V bow, 10' or 12' long. Dick,

EXPERIENCED MOTHER - to care for 2 children, 1 is schoolage, Mon.-Fri., 8 to 5:30, prefer my home, for details, call Ext. 3349.

PORTABLE TYPEWRITER - elite, inexpensive, to loan for 3 mo. Dostrovsky, Ext. 3019.

DRUM SET - Rogers, Ludwig or other good make, steel string guitar. 744-8624 after 6.

HOME - for 10 mo old spayed female Siamese cat. Carol, 928-9537.

SMALL HUTCH - China closet or buffet, maple wood, no wider than $38^{\prime\prime}$ for kitchenette. Reasonable. 286-0376.

BABYSITTER - 7:00 a.m. to 4:00 p.m., 5 days a week, on site or Shoreham area. Ext. 3032.

HOMES FOR KITTENS - calico, orange tabby and black & white, also pool table and ping pong table. 744-2821.

HOME FOR KITTEN - female, calico. Alina, 281-

BABYSITTER - Westhampton Beach area, kindergarten child, 12 noon to 4 p.m. Pauline, 288-6367.
CLARINET - for beginner. Ext. 3071 or 345-3071.

LAWN LEAF SWEEPER - Ray, Ext. 2002.
PIANO - upright, tunable. Reasonable. Dan, Ext.

DRIVER - temporary (2 wks or less) from Port Jeff Sta. area. Will share fuel costs. Niels, Ext. 4597.

Car Pools

3145.

RIVERHEAD - 1 or 2 drivers needed to complete existing 3 member car pool. Pat, Ext. 4519.

SMITHHAVEN MALL AREA - start or join existing car pool. Ext. 7941.

Lost & Found

LOST - Mercedes hubcap, maroon. Smith, Ext. 3378. LOST - grey male cat, injured Sept. 23 on Highway

25 in Ridge. Any info, please call Ext. 4393 or 924-

LOST - Men's glasses, gold frames in brown case near Chemistry parking lot. Fred, Ext. 3259.

FOUND - Wednesday, Sept. 20, small Yale lock key marked LL31. Hull, Medical, Ext. 3655.

Service

0569 evenings.

DRYWELLS INSTALLED - cesspool lines repaired. Reasonable. Mike, 289-5704 after 5:30.

DRESSMAKER - custom made gowns, dresses, suits, alterations. Catherine, 588-5476.

CHILD CARE - my children in school full time, have lots of love and attn to care for yours in my home in Shoreham. Lunch, snack, fenced yard. Carol, 821-9547.

ROTOTILLING - Gardens up to 1,000 sq ft for only \$15. Tom, 325-1033.

NEW & USED TIRES - rims, repairs, MAG wheel service, reg, radial, Dunlop-Firestone, free instal, balance avail. Fred Usack, Ext. 4597 lunchtime or 475-4935 eves.

ROTOTILLING - The Troy-bilt way, gardens and lawns, deep tilling. \$14.50 does up to 20x40 area. 1 p.m. to 5 p.m. 698-6335.